Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (currently amended): A method of adaptively reducing noise within an x-ray image comprising:

receiving raw image data from an x-ray detector representing a detected x-ray signal from an object being imaged;

generating a counts-based modulation mask ~~in response to~~ based on said raw image data;

generating a structure dependent noise filtered image ~~in response to~~ based on said raw image data; and

generating a noise reduced image ~~in response to~~ based on said counts-based modulation mask and said structure dependent noise filtered image;

wherein said counts-based modulation mask is generated by assigning a weighted value of said detected x-ray signal intensity of said raw image data at each pixel of said x-ray detector;

wherein said weighted value is defined by a group of count modulation curves; and

wherein each count modulation curve in said group of count modulation curves effects a different level of noise reduction.

Claim 2 (currently amended): A method as in claim 1 further comprising:

generating a structure gradient mask ~~in response to~~ based on said raw image data; and

generating said noise reduced image ~~in response to~~ based on said structure gradient mask.

Claim 3 (currently amended): A method as in claim 1 further comprising:

normalizing said raw image data in response to a dose-sensitivity setting of said x-ray detector; and

generating said noise reduced image in response to said normalization.

Claim 4 (currently amended): A method of adaptively reducing noise within an x-ray image having a plurality of pixels comprising:

receiving raw image data representing a detected x-ray signal from an object;

generating a counts-based modulation mask ~~in response to~~ based on said raw image data;

generating a structure gradient mask ~~in response to~~ based on said raw image data; and

generating a noise reduced image ~~in response to~~ based on said counts-based modulation mask and said structure gradient mask;

wherein said counts-based modulation mask is generated by assigning a weighted value of said detected x-ray signal of said raw image data at each pixel of said plurality of pixels; and

wherein said weighted value is defined by a group of count modulation curves; and

wherein each count modulation curve in said group of count modulation curves effects a different level of noise reduction.

Claim 5 (currently amended): A method as in claim 4 further comprising:

executing a structural analysis of said raw image data to derive a structure dependent noise filtered image; and

generating said noise reduced image ~~in response to~~ based on said structure dependent noise filtered image.

Claim 6 (currently amended): A method as in claim 4 wherein said structure gradient mask is generated in response to execution of a structural analysis of said raw image data.

Claim 7 (currently amended): A method as in claim 4 wherein generating said noise reduced image comprises:

generating a conditioned structure mask ~~in response to~~ based on said raw image data; and

blending said counts-based modulation mask and said conditioned structure mask to generate a blended image having a plurality of blended values.

Claim 8 (currently amended): A method as in claim 7 wherein blending comprises modulating said blending values at each pixel location of said plurality of pixels ~~in response to~~ based on said counts-based modulation mask and said conditioned structure mask.

Claim 9 (currently amended): A method as in claim 4 further comprising:

executing a structural analysis of said raw image data to derive a structure dependent noise filtered image and to generate a conditioned structure mask;

blending said raw image data, said counts-based modulation mask, said structure dependent noise filtered image, and said conditioned structure mask to generate a blended image; and

generating said noise reduced image ~~in response to~~ based on said blended image.

Claim 10 (original): A method as in claim 9 wherein said blended image is generated in response to a final mask defined as the multiplication of said counts-based modulation mask and said conditioned structure mask.

Claim 11 (original): A method as in claim 10 wherein said blended image is generated in response to the multiplication of said structure dependent noise filtered image, said final mask, and a predetermined blend parameter.

Claim 12 (currently amended): A method as in claim 10 wherein said blended image is generated in response to the multiplication of said raw image data by a subtracted result of one minus a multiplied result of a predetermined blend parameter and said final mask.

Claim 13 (original): A method as in claim 4 further comprising:

generating a conditioned structure mask in response to said structure gradient mask; and

generating said noise reduced image in response to said conditioned structure mask.

Claim 14 (original): A method as in claim 13 wherein said conditioned structure mask is generated in response to a low count modulation of said raw data and a weighted function.

Claim 15 (original): A method as in claim 13 wherein generating said conditioned structure mask comprises:

generating a gradient threshold value;

generating a gradient threshold scaler;

generating a weighted function in response to said structure gradient mask, said gradient threshold value, and said gradient threshold scaler; and

generating said conditioned structure mask in response to said raw data and said weighted function.

Claim 16 (original): A method as in claim 13 wherein said conditioned structure mask is generated in response to a low count limit and a low count flat.

Claim 17 (original): A method as in claim 4 wherein said counts-based modulation mask represents a weighting function on absolute detected intensities comprising effects of imaging system gain.

Claim 18 (original): A method as in claim 4 wherein generating said noise reduced image comprises:

generating a plurality of blended values in response to said counts-based modulation mask and said structure gradient mask; and

intensity matching said plurality of blended values.

Claim 19 (original): A method as in claim 18 wherein intensity matching said plurality of blended values comprises equalizing intensity levels of said blended image.

Claims 20-22 (canceled)

Claim 23 (currently amended): A method as in claim ~~22~~ 4 wherein said group of count modulation curves comprises a low noise reduction curve, a medium noise reduction curve, and a high noise reduction curve.

Claim 24 (currently amended): A method as in claim ~~20~~ 4 wherein ~~said~~ each count modulation curve comprises at least one segment selected from a primary offset segment, a primary roll-off segment, secondary offset segment, a secondary roll-off segment, primary offset segment with constant weighting, a primary roll-off segment with decreasing weighting,

secondary offset segment with constant weighting, and a secondary roll-off segment with decreasing weighting.

Claim 25 (currently amended): A method as in claim ~~20~~ 4 wherein at least a portion of ~~said~~ each count modulation curve is in a form of a Gaussian distribution.

Claim 26 (original): A method as in claim 4 wherein generating said noise reduced image comprises:

generating blended values in response to said counts-based modulation mask and said structure gradient mask; and

generating said noise reduced image in response to said blended values, smoothing of said raw data, and smoothing of said blended values.

Claims 27-29 (canceled)

Claim 30 (currently amended): An x-ray system for adaptively reducing noise within an x-ray image comprising:

an x-ray source generating x-rays;

an x-ray detector receiving said x-rays and generating raw image data in response to said received x-rays; and

a controller generating a counts-based modulation mask, a structure gradient mask, and a structure dependent noise filtered image in response to said raw image data, and generating a noise reduced image in response to said raw image data, said counts-based modulation mask, said structure dependent noise filtered image, and said structure gradient mask;

wherein said counts-based modulation mask is generated by assigning a weighted value of said received x-rays at each pixel of said x-ray detector; and

wherein said weighted value is defined by a group of count modulation curves; and

wherein each count modulation curve in said group of count modulation curves effects a different level of noise reduction.

Claim 31 (currently amended): A system as in claim 30 wherein generating said noise reduced image comprises:

deriving a conditioned structure mask in response to said structure gradient mask; and

blending said raw image data, said counts-based modulation mask, said structure dependent noise filtered image, and said conditioned structure mask.